

Appl. No. 10/055,492  
Amdt. dated August 17, 2004  
Reply to Office Action of May 17, 2004

Docket No. A01125

**AMENDMENTS TO CLAIMS:**

1. (previously presented) An aqueous coating composition having improved adhesion to friable surfaces comprising:
- (a) an emulsion polymer having a glass transition temperature of  $-20^{\circ}\text{C}$  to  $100^{\circ}\text{C}$  and an average particle diameter less than 120 nanometers, said emulsion polymer consisting essentially of:
    - (i) at least one copolymerized ethylenically unsaturated nonionic monomer, each of said nonionic monomer(s) having a water solubility less than 8% by weight based on the weight of water; and
    - (ii) at least one copolymerized acid monomer, such that the acid number of said emulsion polymer is 30 to 100;wherein said emulsion polymer is made without the use of chain transfer agents; and
  - (b) 0.25-10%, by weight based on said emulsion polymer weight, nonionic surfactants selected from the group consisting of water-soluble alkyl phenol ethoxylates, alkyl alcohol ethoxylates, and mixtures thereof.
2. (original) The coating composition of claim 1 wherein the acid number of said emulsion polymer is 39 to 50.
3. (original) The coating composition of claim 1 wherein the average particle diameter of said emulsion polymer is less than 80 nanometers.
4. (previously presented) An aqueous coating composition having improved adhesion to friable surfaces comprising:
- (a) an emulsion polymer having a glass transition temperature of  $-20^{\circ}\text{C}$  to  $100^{\circ}\text{C}$  and an average particle diameter less than 120 nanometers, said emulsion polymer consisting essentially of:
    - (i) 8-99.5%, by weight based on said emulsion polymer weight, of at least one copolymerized ethylenically unsaturated first nonionic

OK TO ENTER  
09/13/04  
Jan

Appl. No. 10/055,492  
Amdt. dated August 17, 2004  
Reply to Office Action of May 17, 2004

Docket No. A01125

- monomer, each of said first nonionic monomer(s) having a water solubility of at least 8% by weight based on the weight of water;
- (ii) 0-91.5%, by weight based on said emulsion polymer weight, of at least one copolymerized ethylenically unsaturated second nonionic monomer, each of said second nonionic monomer(s) having a water solubility of less than 8% by weight based on the weight of water; and
  - (iii) at least 0.5%, by weight based on said emulsion polymer weight, of at least one copolymerized acid monomer, such that the acid number of said emulsion polymer is 4 to 100;

wherein said emulsion polymer is made without the use of chain transfer agents; and

- (b) 0.25-10%, by weight based on said emulsion polymer weight, nonionic surfactants selected from the group consisting of water-soluble alkyl phenol ethoxylates, alkyl alcohol ethoxylates, and mixtures thereof.
5. (original) The coating composition of claim 4 wherein the average particle diameter of said emulsion polymer is less than 80 nanometers.
6. (withdrawn) A method for improving the adhesion of a dried aqueous coating composition to a friable surface comprising:
- (1) forming an aqueous coating composition comprising:
    - (a) an emulsion polymer having a glass transition temperature of -20°C to 100°C and an average particle diameter less than 120 nanometers, said emulsion polymer consisting essentially of:
      - (i) at least one copolymerized ethylenically unsaturated nonionic monomer, each of said nonionic monomer(s) having a water solubility less than 8%; and
      - (ii) at least one copolymerized acid monomer, such that the acid number of said emulsion polymer is 30 to 100; and

Appl. No. 10/055,492  
Amdt. dated August 17, 2004  
Reply to Office Action of May 17, 2004

Docket No. A01125

- (b) 0.25-10%, by weight based on said emulsion polymer weight, nonionic surfactants selected from the group consisting of water-soluble alkyl phenol ethoxylates, alkyl alcohol ethoxylates, and mixtures thereof; and
  - (2) applying said aqueous coating composition to a surface; and
  - (3) drying, or allowing to dry, said aqueous coating composition.
7. (withdrawn) The method of claim 6 wherein the acid number of said emulsion polymer is 39 to 50.
8. (withdrawn) The method of claim 6 wherein the average particle diameter of said emulsion polymer is less than 80 nanometers.
9. (withdrawn) A method for improving the adhesion of a dried aqueous coating composition to a friable surface comprising:
- (1) forming an aqueous coating composition comprising:
    - (a) an emulsion polymer having a glass transition temperature of -20°C to 100°C and an average particle diameter less than 120 nanometers, said emulsion polymer consisting essentially of:
      - (i) 8-99.5%, by weight based on said emulsion polymer weight, of at least one copolymerized ethylenically unsaturated first nonionic monomer, each of said first nonionic monomer(s) having a water solubility of 8% or more;
      - (ii) 0-91.5%, by weight based on said emulsion polymer weight, of at least one copolymerized ethylenically unsaturated second nonionic monomer, each of said second nonionic monomer(s) having a water solubility of less than 8%; and
      - (ii) at least 0.5%, by weight based on said emulsion polymer weight, of at least one copolymerized acid monomer, such that the acid number of said emulsion polymer is 4 to 100; and
    - (b) 0.25-10%, by weight based on said emulsion polymer weight, nonionic surfactants selected from the group consisting of water-soluble alkyl phenol ethoxylates, alkyl alcohol ethoxylates, and mixtures thereof; and
  - (2) applying said aqueous coating composition to a surface; and
  - (3) drying, or allowing to dry, said aqueous coating composition.

Appl. No. 10/055,492  
Amdt. dated August 17, 2004  
Reply to Office Action of May 17, 2004

Docket No. A01125

10. (withdrawn) The method of claim 9 wherein the average particle diameter of said emulsion polymer is less than 80 nanometers.

~~11.~~ (previously presented) The composition of claim 1 wherein the amount of said nonionic surfactants is 3-8% by dry weight based on the dry weight of said emulsion polymer.

12. (previously presented) The composition of claim 4 wherein the amount of said nonionic surfactants is 3-8% by dry weight based on the dry weight of said emulsion polymer.